

# Research Science Fair Project

Steps to developing a research project

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This type of project primarily involves library research. The student identifies a question or topic of interest and gathers as much information about it as possible. The information is then organized into a meaningful display or presentation.

1. **Select a topic.** A topic that interests you and turn it into a question for further study.
2. **Develop a question(s) about your topic that interest you.** These questions will help guide in you in research.
3. **Conduct research and take notes to answer your questions.** Find out what others know. Use primary sources such as your own experiences or local experts. Use secondary sources, such as books, articles from the web or magazines. Work diligently to use your own words when taking notes without copying word-for-word to reduce the risk of plagiarism. Don't forget to create a bibliography page as you are researching. Ideas come from many sources and you must give credit to your sources for their ideas.
4. **Outline the project.** This will help you organize your notes, thoughts, main ideas, and supporting details. An example outline is included with this checklist to help you get started.
5. **Write the report.** Use the outline you created as a road map to guide you.
6. **Organize the information in a meaningful display to be presented at the science fair.** The purpose of the display is to explain and reference the project well enough so that the viewer could repeat your work or research. Decide how to share the information you gathered on your display board through words, pictures, diagrams, or graphs.

## Sample Outline for a Five-Paragraph Essay (this may look different primary vs. intermediate)

### Paragraph 1: Introduction

The introductory paragraph should include the following elements:

- **Background information:** Enough information necessary for your reader to understand your topic
- **Thesis statement:** Indicates your paper's topic, makes your paper's purpose clear, and provides an overview of the three main supporting points that will unify the essay. The thesis statement is typically the last sentence.

### Paragraph 2: Body Paragraph

- Begins with a **topic sentence** that identifies **one main idea** that will be discussed as support or proof for the thesis statement.
- **Supporting sentences** use specific details, demonstrated through closely related examples or evidence, to expand and explain the main idea. Generally, a well-developed paragraph has at least five to eight sentences.
- **Paragraph unity** means that all ideas in a paragraph are closely related to its topic sentence and further develop that topic sentence. That is, all sentences in a single paragraph must be unified around a central point or idea.

### Paragraph 3: Body Paragraph

- This paragraph, and any subsequent body paragraph, should begin with a **topic sentence** that signals the reader that a **new idea** or point is being introduced.
- As you organize your essay, keep in mind its coherence. **Coherence** refers to connections among paragraphs and ideas—the logical sequence of your thoughts.
  - Use **transition words or phrases** at the outset of your body paragraphs and to move from one idea to another within your paragraphs.
  - Have you transitioned logically from the main idea in the previous paragraph to this one? Are you making clear connections among the paragraphs and ideas? Be sure to think about coherence during the revision stage of the writing process.

### Paragraph 4: Body Paragraph

- This paragraph begins with the final **topic sentence** that relates back to the remaining point mentioned in the thesis statement. Each paragraph should contain a new main idea.
- Again, flesh out this main idea with specific examples, details, and relevant support.
- Be sure to maintain paragraph unity. That is, each sentence must relate to your topic sentence.

### Paragraph 5: Conclusion

- The conclusion revisits your overall purpose for writing and often invites your reader to consider the implications of why your ideas are significant.
- The conclusion may restate the thesis, summarize the paper's major points, or leave the reader with a final thought to ponder. Several other methods for writing conclusions are included on a separate Tutoring Center handout. If you choose to restate the thesis or summarize the essay's main ideas, do not repeat the same wording from the introduction or body paragraphs.

Think of the introduction and conclusion as “bookends” that serve to hold the essay tightly together. The introduction will “push” into or initiate the examination of your topic and the angle you decide to focus on, while the conclusion will “pull” tight all the ideas that you have gathered together for a unified essay.

## **Sample Outline for a Five-Paragraph Essay (this may look different primary vs. intermediate)**

Remember not to introduce new, unrelated ideas in the conclusion.
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